

## Innovative P1451-Enabled Smart Power IVHM Sensor, Phase I

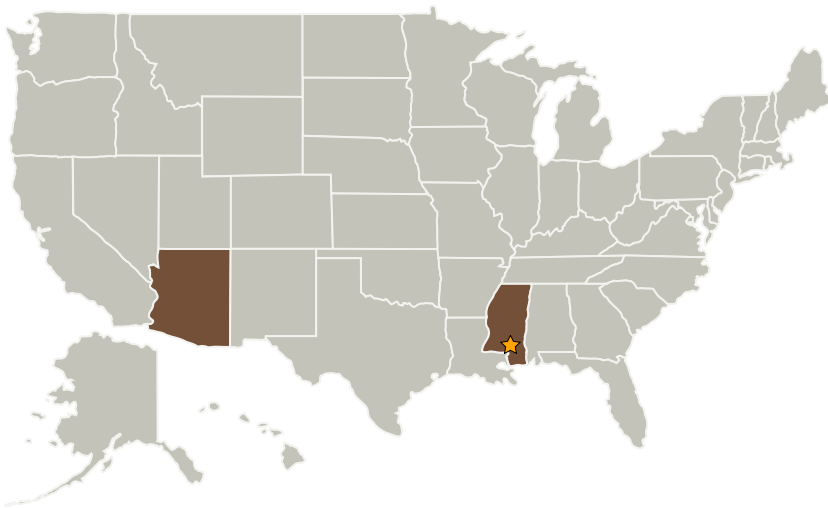
Completed Technology Project (2009 - 2009)



## Project Introduction

NASA has expressed a requirement for advanced Smart Sensors to support new systems for harsh environments. Power systems are an integral component of virtually any electronic or electromechanical system and thus are an excellent application for non-intrusive power system state-of-health and IVHM-enabled sensing. Ridgetop will provide a non-intrusive, eigenvalue-based, IEEE P1451-compatible, power system health sensor. The sensor connects to the power source, as a "black box", by means of a current pickup loop, and load changes produce a characteristic response that contains the intrinsic eigenvalues. Variations in the eigenvalues from nominal are correlated with internal component degradation or aging, and reveal the overall state-of-health of the power supply. By P1451 enabling the Smart Sensor, interfacing to Integrated Vehicle Health Monitoring (IVHM) systems is fully supported and adoption of this technology will be much more rapid.

## Primary U.S. Work Locations and Key Partners



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## Organizational Responsibility

### Responsible Mission Directorate:

Space Technology Mission  
Directorate (STMD)

### Lead Center / Facility:

Stennis Space Center (SSC)

### Responsible Program:

Small Business Innovation  
Research/Small Business Tech  
Transfer

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Organizations Performing Work	Role	Type	Location
★Stennis Space Center(SSC)	Lead Organization	NASA Center	Stennis Space Center, Mississippi
Ridgetop Group, Inc.	Supporting Organization	Industry Women-Owned Small Business (WOSB)	Tucson, Arizona

## Primary U.S. Work Locations

Arizona	Mississippi
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## Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

Carlos Torrez

## Technology Areas

**Primary:**

- TX10 Autonomous Systems
  - └ TX10.1 Situational and Self Awareness
  - └ TX10.1.3 Knowledge and Model Building